

CLAIMS

1. A standard solution which is used for controlling a precision of measurement of a measurement apparatus which determines a substrate contained in a sample solution with applying a voltage by a driving power supply to an electrode portion of a biosensor, the biosensor including the electrode portion having a measuring electrode and a counter electrode, as well as a reagent layer reacting with the sample solution supplied to the electrode portion, and thereby electrochemically measuring a reaction between the sample solution and the reagent layer, wherein said standard solution includes reducing substance.

2. The standard solution as defined in Claim 1, wherein when a first potential is applied to the electrode portion of the biosensor to which the standard solution is supplied, by the driving power supply of the measurement apparatus, the standard solution shows an oxidation current waveform which is definitely different from a waveform which is obtained when the first potential is applied to the electrodes of the biosensor to which the sample solution is supplied, and

when a second potential smaller than the first potential is applied to the electrode portion of the biosensor to which the standard solution is supplied, the standard solution shows

an oxidation current waveform which is similar to a waveform which is obtained when the second potential is applied to the electrode portion of the biosensor to which the sample solution is supplied.

3. The standard solution as defined in Claim 2, wherein the standard solution is one such that a value of the oxidation current which flows when the first potential is applied to the electrode portion of the biosensor to which the standard solution is supplied by the driving power supply of the measurement apparatus is larger than a value of the oxidation current which flows when the second potential is applied.

4. The standard solution as defined in any of Claims 1 to 3, wherein,

the reducing substance is oxidized when the potential of the measuring electrode is 0.1V to 1.0V higher than that of a reference electrode of Ag/AgCl.

5. The standard solution as defined in any of Claims 1 to 4, wherein

the reducing substance is at least one of uric acid, bilirubin, ascorbic acid, methylene blue, Bis(2-hydroxyethyl)iminotris(hydroxymethyl)methane, N,N-Bis(2-

hydroxyethyl)-2-aminoethanesulfonic acid, acetaminophen.

6. A method for determining a substrate contained in a sample solution on the basis of an oxidation current value which is obtained by applying a first potential by a driving power supply of a measurement apparatus to an electrode portion of a biosensor including the electrode portion having a counter electrode and a measuring electrode, as well as a reagent layer reacting with the sample solution supplied to the electrode portion for a first time period, and then stopping the application for a given time period, and applying a second potential smaller than the first potential to the electrode portion for a second time period after the given time period has passed, wherein

a standard solution containing a reducing substance is supplied to the electrode portion of the biosensor as a standard solution used for controlling a precision of measurement of the measurement apparatus, and

it is discriminated whether a kind of analyte liquid supplied to the biosensor is the sample solution or the standard solution on the basis of the oxidation current value obtained by applying the first potential and the oxidation current value obtained by applying the second potential.

7. The determination method as defined in Claim 6, wherein

when the first potential is applied to the electrode portion of the biosensor to which the standard solution is supplied, by the driving power supply of the measurement apparatus, the standard solution shows an oxidation current waveform which is definitely different from a waveform which is obtained when the first potential is applied to the electrodes of the biosensor to which the sample solution is supplied, and

when the second potential smaller than the first potential is applied to the electrode portion of the biosensor to which the standard solution is supplied, the standard solution shows an oxidation current waveform which is similar to a waveform which is obtained when the second potential is applied to the electrode portion of the biosensor to which the sample solution is supplied.

8. The determination method as defined in Claim 7, wherein the standard solution is one such that the value of the oxidation current which flows when the first potential is applied to the electrode portion of the biosensor to which the standard solution is supplied by the driving power supply of the measurement apparatus is larger than the value of the oxidation current which flows when the second potential is applied.

9. The determination method as defined in Claim 6, wherein,

it is discriminated whether a kind of analyte liquid supplied to the biosensor is the sample solution or the standard solution with using ratios between oxidation current values obtained by applying the first potential and oxidation current values obtained by applying the second potential.

10. The determination method as defined in Claim 6, wherein

a discrimination parameter used for the discrimination is calculated on the basis of the oxidation current value obtained by applying the first potential and the oxidation current value obtained by applying the second potential, a discrimination function employing the discrimination parameter as an independent variable is defined, and a numeric value obtained by substituting the value of the discrimination parameter into the discrimination function is taken as a discrimination index, thereby discriminating whether the kind of analyte liquid supplied to the biosensor is the sample solution or the standard solution, on the basis of the discrimination index.

11. The determination method as defined in Claim 6, wherein

the reducing substance is oxidized when the potential of the measuring electrode is 0.1V to 1.0V higher than that of a reference electrode of Ag/AgCl.

12. The determination method as defined in any of Claims 6 to

11, wherein

the reducing substance is at least one of uric acid, bilirubin, ascorbic acid, methylene blue, Bis(2-hydroxyethyl)iminotris(hydroxymethyl)methane, N,N-Bis(2-hydroxyethyl)-2-aminoethanesulfonic acid, acetaminophen.